

REMARKS

This Amendment is submitted in response to the final Office Action mailed on December 14, 2009. No fee is due in connection with this Amendment. The Director is authorized to charge any additional fees which may be required, or to credit any overpayment to Deposit Account No. 02-1818. If such a withdrawal is made, please indicate the Attorney Docket No. 3712174-00478 on the account statement.

Claims 11, 14-16, 18-21 and 25-26 are pending in this application. Claims 1-10, 12-13, 17 and 22-24 were previously canceled without prejudice or disclaimer. In the Office Action, Claims 11, 14-16, 18-21 and 25-26 are rejected under 35 U.S.C. §112. Claims 11, 14-16, 18-21 and 25-26 are further rejected under 35 U.S.C. §103. In response, Claims 11, 21 and 25 have been amended. The amendments do not add new matter. At least in view of the amendments and/or for the reasons set forth below, Applicants respectfully submit that the rejections should be withdrawn.

In the Office Action, Claims 11, 14-16, 18-21 and 25-26 are rejected under 35 U.S.C. §112, first paragraph, for failure to comply with the written description requirement. The Patent Office asserts that the Specification fails to provide support for the limitation of “sequential selective deposition.” See, Office Action, page 2, lines 6-12. In response, Applicants have amended Claims 11 and 21 to remove the limitation “sequential selective deposition” and instead recite “a plurality of vacuum processing chambers for sequentially forming the plurality of organic material layers on the substrate at a [] color position with the substrate attached to the mask.” These amendments do not add new matter. The amendments are fully supported in the Specification at, for example, Abstract, lines 6-9; page 1, paragraph 14, lines 12-14; page 2, paragraph 15, lines 13-15; page 4, paragraph 64; pages 5-6, paragraphs 77-91.

Accordingly, Applicants respectfully request that the rejection of Claims 11, 14-16, 18-21 and 25-26 under 35 U.S.C. §112, first paragraph, be withdrawn.

In the Office Action, Claim 25 is rejected under 35 U.S.C. §112, second paragraph, as being indefinite. The Patent Office asserts that the phrase “a heating vessel containing an organic material layer” is indefinite because it is unclear whether a specific layer is deposited on the heating vessel or whether the heater heats a specific material to form a specific layer on the substrate. See, Office Action, page 2, lines 15-20. In response, Applicants have amended Claim 25 to recite that “each of the vacuum processing chambers includes a heating vessel holding an

organic material for forming a layer on the substrate, wherein the layer is selected from the group consisting of: a hole injection layer, a hole transfer layer, a light emitting layer and an electric charge injection layer.” These amendments do not add new matter. The amendments are supported in the Specification at, for example, page 3, paragraphs 52-53; page 5, paragraphs 78-79 and 84; Fig. 8. Applicants respectfully submit that it is now clear that the heater holds a specific material to form a specific layer on the substrate.

Accordingly, Applicants respectfully request that the rejection of Claim 25 under 35 U.S.C. §112, second paragraph, be withdrawn.

In the Office Action, Claims 11, 14-16, 18-21 and 25-26 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,143,083 to Yonemitsu et al. (“Yonemitsu”) in view of U.S. Patent No. 5,259,881 to Edwards et al. (“Edwards”) and U.S. Patent No. 4,492,180 to Martin (“Martin”). In response, Applicants have amended independent Claim 11 and dependent Claim 21. In view of the amendments and/or for at least the reasons set forth below, Applicants respectfully submit that, even if combinable, the cited references fail to disclose or suggest each and every element of independent Claim 11 and Claims 14-15, 18-21 and 25-26 that depend therefrom.

Independent Claim 11 recites, in part, an apparatus for manufacturing an organic electroluminescence display, the apparatus comprising: a first alignment mechanism for aligning a mask, having openings corresponding to the predetermined pattern, to the substrate and for detachably attaching the mask and the substrate; a first formation unit including a plurality of vacuum processing chambers for sequentially forming the plurality of organic material layers on the substrate at a first color position with the substrate attached to the mask; a second alignment mechanism for changing the alignment between the substrate and the mask, and for detachably attaching the substrate and the mask again; and a second formation unit including a plurality of vacuum processing chambers for sequentially forming the plurality of organic material layers on the substrate at a second color position with the substrate attached to the mask, wherein each of the vacuum processing chambers correspond to each of the organic material layers, and wherein the second alignment mechanism is provided to connect the first formation unit and the second formation unit in series thereby providing flow-through processing.

Similarly, Claim 21 recites, in part, an apparatus for manufacturing an organic electroluminescence display as claimed in claim 11, further comprising: a third formation unit including a plurality of vacuum processing chambers for sequentially forming the organic material layers on the substrate at a third color position with the substrate attached to the mask. These amendments do not add new matter. The amendments are supported in the Specification at, for example, page 1, paragraph 14, lines 12-14; page 2, paragraph 15, lines 13-15; paragraphs 27 and 36-37; page 4, paragraph 64; page 5, paragraph 77, lines 4-14; paragraph 78, lines 5-10; page 6, paragraph 86, lines 2-5; paragraph 88, lines 5-10; paragraph 89, lines 2-5; paragraph 91, lines 5-10; page 7, paragraph 114, lines 3-7; paragraph 115; paragraph 116, lines 1-8; pages 7-8, paragraph 117; page 8, paragraphs 118, 124 and 127; page 8, paragraph 136; page 9, paragraphs 137-38 and 140-41. By forming the organic material layers for each formation unit sequentially in a state with the substrate and the mask attached, realignment is not needed during the formation of the organic material layers for a single organic layer. See, Specification, page 2, paragraphs 17-18; pages 5-6, paragraphs 77-91. This greatly reduces the waiting time for heating the vapor deposition sources, reduces equipment costs and decreases the amount of organic materials consumed in forming the organic layers. See, Specification, page 1, paragraph 13; page 8, paragraph 136; page 9, paragraphs 137-38. In contrast, even if combinable, the cited references fail to disclose every element of the present claims.

For example, even if combinable, the cited references fail to disclose or suggest a plurality of vacuum processing chambers for sequentially forming the organic material layers on the substrate at a third color position with the substrate attached to the mask as required, in part, by independent Claim 11. The Patent Office asserts that *Yonemitsu* discloses “a first film formation unit 701 including a plurality of vacuum chambers 70 for sequential deposition of a plurality of layers around a vacuum transfer chamber 55” and “a second film formation unit 701’ including a plurality of vacuum chambers 70’ for sequential deposition of a plurality of layers around a second vacuum transfer chamber.” See, Office Action, page 2, lines 11-16. However, the portions of *Yonemitsu* relied on by the Patent Office merely disclose a plurality of reaction chambers 70 for “the deposition of various films. . . by various kinds of [chemical vapor deposition].” See, *Yonemitsu*, column 11, lines 23-25 and 38-41. Nowhere does *Yonemitsu* disclose the use of a mask for sequentially forming the organic material layers at a single color position with the substrate attached to the mask, nor does *Yonemitsu* suggest that its reaction

chambers are capable of performing sequentially forming organic material layers at a single color position with the substrate attached to a mask. Instead, *Yonemitsu* is entirely directed to a substrate processing apparatus for processing a semiconductor wafer and fails to even mention the use of a mask anywhere in its disclosure. See, *Yonemitsu*, column 1, lines 10-12; column 2, lines 10-12. In fact, the Patent Office admits that *Yonemitsu* fails to disclose aligning a mask with a substrate. See, Office Action, page 2, lines 18-20. As such, *Yonemitsu* fails to disclose or suggest that its plurality of reaction chambers may be used for sequentially forming a plurality of organic material layers at a single color position with the substrate attached to the mask as required, in part, by the present claims.

Edwards and *Martin* also fail to a plurality of vacuum processing chambers for sequentially forming a plurality of organic material layers at a single color position with the substrate attached to the mask. The Patent Office relies on *Edwards* merely for the disclosure of two processing apparatuses connected by an alignment chamber. See, Office Action, page 4, lines 3-4. Like *Yonemitsu*, *Edwards* is entirely directed to a semiconductor wafer processing apparatus and fails to disclose the use of a mask for sequentially forming a plurality of organic material layers at a single color position. See, *Edwards*, column 1, lines 5-9; column 3, lines 7-13. The Patent Office relies on *Martin* merely for the disclosure of an alignment means for aligning a mask to a substrate and detachably attaching the mask and the substrate. See, Office Action, page 4, lines 5-8. However, though *Martin* teaches an apparatus for aligning a deposition mask with a substrate, nowhere does *Martin* disclose or suggest forming organic material layers in a plurality of vacuum processing chambers, nor does the Patent Office cite support for such claimed element. See, *Martin*, Abstract; column 1, lines 9-19; column 2, lines 46-50. Instead, *Martin* teaches an apparatus for indexing a deposition mask to a substrate at a single working station where vapor deposition occurs. See, *Martin*, column 3, lines 7-26; column 4, lines 18-52. Therefore, even if combinable, the cited references fail to disclose or even suggest a plurality of vacuum processing chambers for sequentially forming a plurality of organic material layers at a single color position with the substrate attached to the mask in accordance with the present claims.

Moreover, one of ordinary skill in the art would have no reason to combine the alignment mechanisms of *Edwards* and *Martin* with the apparatus of *Yonemitsu* to arrive at the present claims because *Yonemitsu* never discloses the use of a mask or aligning a mask and a substrate to

perform selective deposition. *Yonemitsu* is entirely directed to a semiconductor wafer processing apparatus and fails to disclose the use of a deposition mask for selective deposition of a plurality of organic material layers. See, *Yonemitsu*, column 1, lines 10-12; column 2, lines 10-12. In fact, *Yonemitsu* fails to even use the term “mask” anywhere in its disclosure.

In response to Applicants’ arguments regarding the combinability of the references, the Patent Office merely asserts that “Edwards et al and Martin teach[] using a mask. Thus one of ordinary skill in the art would be motivated to use a mask in the apparatus of *Yonemitsu* et al.” See, Office Action, page 6, lines 21-22; page 7, lines 1-2. However, this conclusory statement fails to explain why one of ordinary skill in the art would use a mask with the apparatus of *Yonemitsu* when *Yonemitsu* fails to disclose the use of a deposition mask or the alignment of a mask with a substrate to perform selective deposition at a single color position on the substrate. As such, Applicants respectfully submit that one of ordinary skill in the art would have no reason to combine the alignment mechanisms of *Edwards* or *Martin* with the semiconductor wafer processing apparatus of *Yonemitsu* to arrive at the present claims

Applicants further submit that the combination of references proposed by the Patent Office appears to be improper hindsight reconstruction of the present claims. The Federal Circuit has held that it is “impermissible to use the claimed invention as an instruction manual or ‘template’ to piece together the teachings of the prior art so that the claimed invention is rendered obvious.” *In re Fritch*, 23 U.S.P.Q.2d 1780, 1784 (Fed. Cir. 1992). “One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.” *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). The Patent Office merely concludes that because *Edwards* and *Martin* teach using a mask, one skilled in the art would necessarily be motivated to use a mask in the apparatus of *Yonemitsu*. See, Office Action, page 6, line 22; page 7, lines 1-2. However, these types of conclusory statements are exactly the type of hindsight reconstruction the Federal Circuit seeks to avoid. Applicants respectfully submit that it is improper to combine *Martin*’s apparent suggestion of aligning a deposition mask with a substrate at a single working station with *Yonemitsu*’s disclosure of the formation of the organic material layers in multiple chambers because one skilled in the art would understand that *Yonemitsu* is entirely unconcerned with deposition at a single color position using a mask.

Accordingly, Applicants respectfully request that the rejection of Claims 11, 14-16, 18-21 and 25-26 under 35 U.S.C. §103(a) to *Yonemitsu*, *Edwards* and *Martin* be withdrawn.

In the Office Action, Claim 16 is rejected under 35 U.S.C. §103(a) as being unpatentable over *Yonemitsu* in view of *Edwards* and *Martin* and further in view of U.S. Patent Publication No. 2001/0006827 to Yamazaki et al. ("*Yamazaki*"). Applicants respectfully submit that, even if combinable, the cited references fail to disclose or suggest each and every element of Claim 16.

As discussed previously, *Yonemitsu*, *Edwards* and *Martin* fail to disclose or suggest a plurality of vacuum processing chambers for sequentially forming the organic material layers on the substrate at a specific color position with the substrate attached to the mask as required, in part, by independent Claim 11 from which Claim 16 depends. The Patent Office relies on *Yamazaki* merely for the disclosure of a magnetic attachment fixture that forms a sandwich with the substrate. See, Office Action, page 5, lines 21-22; page 6, lines 1-10. Nowhere does *Yamazaki* disclose or suggest a plurality of vacuum processing chambers for sequentially forming the plurality of organic material layers with the substrate attached to the mask, nor does the Patent Office cite support for such claimed element. As such, even if combinable, *Yamazaki* fails to remedy the deficiencies of *Yonemitsu*, *Edwards* and *Martin* with respect to Claim 16.

Accordingly, Applicants respectfully request that the rejection of Claim 16 under 35 U.S.C. §103(a) to *Yonemitsu*, *Edwards*, *Martin* and *Yamazaki* be withdrawn.

For the foregoing reasons, Applicants respectfully submit that the present application is in condition for allowance and earnestly solicit reconsideration of same.

Respectfully submitted,

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